



TFW 1626

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicants:** Han et al.

**Serial No.:** 10/521,508

**Case No.:** MC060YP

**Art Unit:**

1626

**Filed:** January 18, 2005

**Examiner:**

Yong Chu

**For:** EP4 Receptor Agonist, Compositions and Methods  
Thereof

Commissioner for Patents  
Alexandria, VA 22313-1450

**RESPONSE TO RESTRICTION REQUIREMENT**

Sir:

This paper is filed in response to the restriction requirement mailed February 17, 2006 and for which a response is due on March 17, 2006. Claims 1-15 are currently pending in the application and are subject to the following restriction under 35 U.S.C. 121 as follows:

Group I: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub>, or CH=CH; A and W are independently selected from a bond or unsubstituted C1-6 alkylene; and Z is O or S) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group II: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is a cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group III: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group IV: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is a disubstituted aryl or heteroaryl ring...) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group V: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is O or S) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group VI: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group VII: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is CH<sub>2</sub>, HC=CH, or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group VIII: Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is a disubstituted aryl or heteroaryl ring...) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group IX: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is O or S) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group X: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group XI: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group XII: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is a disubstituted aryl or heteroaryl ring..) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group XIII: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is O or S) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group XIV: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group XV: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.).

Group XVI: Claims 1-6 (in part, wherein Y1 is cyclopropyl; A and W are C1-6 alkylene independently substituted with 1 to 4 halogen atoms; and Z is a disubstituted aryl or heteroaryl ring) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group XVII: Claims 7-11 directed to a method of treating ocular disorders related to elevated intraocular pressure by...

35 U.S.C. 121 specifies that if two or more independent and/or distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of the inventions. See MPEP 802.01. Independent generally means that there is no disclosed relationship between the two or more claimed inventions. "Distinct" means that

the inventions, although related, are capable of separate use and patentably distinguishable.

The Examiner states that there are several inventions contained in the subject application that are unrelated because Groups I-XVII do not use the same core to treat disorders related to intraocular pressure.

Applicants provisionally elect the invention of Group III, Claims 1-6 (in part, wherein Y1 is CH<sub>2</sub>CH<sub>2</sub> or CH=CH; A and W are independently selected from a bond, or unsubstituted C1-6 alkylene; and Z is CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1) with traverse. Additionally, the species exemplified in on lines 22 through 35 on page 10 and lines 22 through 35 on page 10 are selected species of interest.

Applicants respectfully submit that the Examiner fails to justify the restriction requirement. The compounds of structural formula I are closely related in use as EP4 agonists. Although variations exist in Y, Y1, R1, R2, R3, R4, and Z, all the compounds containing these substituent groups are all drawn to the compounds of EP4 agonist and can be used to treat a subject suffering from ocular diseases such as glaucoma and ocular hypertension.

Assuming for argument sake the application does contain more than one invention, Applicant would like to suggest alternative groupings than those provided by the examiner. The suggested groups are:

Group A: Claims 1-6 (in part, wherein X is S, Y1 is CH<sub>2</sub>CH<sub>2</sub>, or CH=CH; A and W are independently selected from a bond or unsubstituted or substituted C1-6 alkylene; and Z is a disubstituted aryl or heteroaryl ring, S, O, CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group B: Claims 1-6 (in part, wherein X is O, Y1 is CH<sub>2</sub>CH<sub>2</sub>, or CH=CH; A and W are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a disubstituted aryl or heteroaryl ring, S, O, CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group C: Claims 1-6 (in part, wherein X is S, Y1 is CH<sub>2</sub>CH<sub>2</sub>, or CH=CH; A and W are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group D: Claims 1-6 (in part, wherein X is O, Y1 is CH<sub>2</sub>CH<sub>2</sub>, or CH=CH; A and W are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group E: Claims 1-6 (in part, wherein X is S, Y1 is cyclopropyl; A and W are are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a disubstituted aryl or heteroaryl ring, S, O, CH<sub>2</sub>, CH=CH or C≡C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group F: Claims 1-6 (in part, wherein X is O, Y1 is cyclopropyl; A and W are are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a disubstituted aryl or

heteroaryl ring, S, O, CH<sub>2</sub>, CH=CH or C=C) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group G: Claims 1-6 (in part, wherein X is S, Y1 is cyclopropyl; A and W are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group H: Claims 1-6 (in part, wherein X is O, Y1 is cyclopropyl; A and W are are independently selected from a bond, unsubstituted or substituted C1-6 alkylene; and Z is a cyclopropyl) and 12-15 are drawn to a compound or composition which contains at least one compound of formula I according to claim 1.

Group I: Claims 7-11 directed to a method of treating ocular disorders related to elevated intraocular pressure by...

With the groups immediately suggested above, the compounds of structural formula I of the claimed invention are closely related in structure as they are either oxazolidinyls or thiazolidinyls and in use as they EP4 agonists. Although variations exist in Y, Y1, R1, R2, R3, R4, and Z, all the compounds containing these substituent groups are all drawn to the compounds of EP4 agonist and can be used to treat a subject suffering from ocular diseases such as glaucoma and ocular hypertension.

Furthermore, even though only one invention may be claimed in a single application, a reasonable number of species of the invention can be claimed if there is an allowable generic claim in the application, which is the case of the present application. Accordingly, there is no additional burden on the part of the Examiner to conduct the prior art search for examination of the present application in total.

Should the examiner accept the suggested alternative groupings, Applicant's herein elect Group A and select the species on lines 22-35 on page 10.

In view of the above, the Examiner is respectfully requested to withdraw the restriction requirement of Groups I-XVII. In the alternative, the examiner is respectfully requested to modify the restriction so that Groups A through I, as suggested by Applicant, are deemed the inventions at issue.

The Examiner is respectfully requested to contact the undersigned attorney on any matter related to this application.

Respectfully submitted,

By: 

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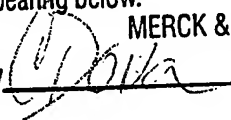
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on the date appearing below.

By  MERCK & CO., INC. Date 3/13/06